AMENDMENTS TO THE CLAIMS

1. (Currently Amended) An internal combustion engine ~~with~~ comprising at least one cylinder with a combustion chamber, in which a fuel/air mixture can be compressed by a piston, wherein a temperature in Kelvin of the fuel/air mixture in the combustion chamber can be set to at least over 80% and up to at most 98% of a spontaneous ignition temperature in Kelvin and with that to a temperature in Kelvin different from the spontaneous ignition temperature in Kelvin of the fuel/air mixture and an ignition of the combustion is time-controlled through an introduction of laser light into the combustion chamber.

2. (Currently Amended) The internal combustion engine according to claim 1, wherein the temperature in Kelvin of the fuel/air mixture in the combustion chamber can be set to at least over 85%, preferably over 87%, of the spontaneous ignition temperature in Kelvin of the fuel/air mixture.

3. (Currently Amended) The internal combustion engine according to claim 1, wherein the temperature in Kelvin of the fuel/air mixture in the combustion chamber can be set to at most 95%, preferably at most 93%, of the spontaneous ignition temperature in Kelvin of the fuel/air mixture.

4. (Previously Presented) The internal combustion engine according to claim 1, wherein the fuel/air mixture is formed outside the combustion chamber.

5. (Previously Presented) The internal combustion engine according to claim 1, wherein the fuel/air mixture is formed in the combustion chamber.

6. (Previously Presented) The internal combustion engine according to claim 1, wherein the fuel/air mixture is formed during the induction stroke.

7. (Previously Presented) The internal combustion engine according to claim 1, wherein the fuel/air mixture in the combustion chamber is at least in parts homogeneous.

8. (Previously Presented) The internal combustion engine according to claim 7, wherein an air/fuel ratio in the whole combustion chamber is approximately constant.

9. (Previously Presented) The internal combustion engine according to claim 7, wherein an air/fuel ratio is smaller in an area around the source of ignition than in the remainder of the combustion chamber.

10. (Previously Presented) The internal combustion engine according to claim 1, wherein an air/fuel ratio is greater than 1.5.

11. (Previously Presented) The internal combustion engine according to claim 1, wherein an air/fuel ratio is greater than 1.8.

12. (Previously Presented) The internal combustion engine according claim 1, wherein a geometric compression ratio is greater than 14.

13. (Previously Presented) The internal combustion engine according claim 1, wherein a geometric compression ratio is greater than 16.

14. (Previously Presented) The internal combustion engine according to claim 1, further comprising at least one laser light source, at least one optical transmission apparatus and at least one coupling optic for focusing of the laser light into the combustion chamber, onto at least one focus.

15. (Previously Presented) The internal combustion engine according to claim 1 further

comprising a plurality of cylinders, wherein each cylinder has an antechamber-less main combustion chamber with in- and outlet valves and at least one focus of the laser light lies in the main combustion chamber.

16. (Previously Presented) The internal combustion engine according to claim 1, wherein the engine comprises a stationary engine.

17. (Previously Presented) The internal combustion engine according to claim 1, wherein a laser light source has a solid-state laser.

18. (Previously Presented) The internal combustion engine according to claim 17, wherein the solid-state laser is diode laser-pumped.

19. (Previously Presented) The internal combustion engine according to claim 17, wherein the solid-state laser is selected from the group consisting of a Yb laser, a Nd laser and a Nd/YAG laser.

20. (Previously Presented) The internal combustion engine according to claim 1, wherein a laser light source comprises at least one laser diode the light of which enters the combustion chamber via an optical conductor and a coupling optic.

21. (Previously Presented) The internal combustion engine according to claim 20, wherein the optical conductor is flexible.

22. (Previously Presented) The internal combustion engine according to claim 1, wherein a laser light source is selected from the group consisting of an actively and a passively Q switched laser.

23. (Previously Presented) The internal combustion engine according to claim 1, wherein a

wavelength of the laser light lies above 400 nm.

24. (Previously Presented) The internal combustion engine according to claim 1, wherein a wavelength of the laser light lies above 1000 nm.

25. (Previously Presented) The internal combustion engine according to claim 1, wherein the laser light produces a laser light pulse wherein a pulse duration of the laser light pulse lies between 1 ns and 100 ns.

26. (Previously Presented) The internal combustion engine according to claim 1, wherein the laser light produces a laser light pulse wherein a pulse duration of the laser light pulse lies between 5 ns and 50 ns.

Claims 27 and 28 (Cancelled).

29. (Previously Presented) The internal combustion engine according to claim 1, further comprising a coupling optic having a combustion chamber window and outside the combustion chamber a lens or a lens arrangement for focusing the laser light through the combustion chamber window into the combustion chamber.

30. (Previously Presented) The internal combustion engine according to claim 29, wherein the combustion chamber window of the coupling optic is made of sapphire.

31. (Previously Presented) The internal combustion engine according to claim 29, wherein the combustion chamber window of the coupling optic comprises a lens.

32. (Currently Amended) The internal combustion engine according to claim 1, further comprising an electronic engine-control or an engine-regulating device ~~is provided~~ which,

according to recorded engine parameters, ~~triggers the~~ is operable to trigger at least one laser light ~~source(s)~~ source and in so doing establishes laser light parameters.

33. (Currently Amended) The internal combustion engine according to claim 32, wherein the recorded engine parameters are at least one selected from the group consisting of a crankshaft angle, a speed, an engine ~~poser~~ power and a current cylinder pressure in the combustion chamber.

34. (Previously Presented) The internal combustion engine according to claim 32, wherein the laser light parameters are at least one selected from the group consisting of a chronological sequence, a pulse duration and an ignition energy.

Claims 35 and 36 (Cancelled).

37. (Currently Amended) The internal combustion engine according to claim 1, further comprising an electronic engine-control or an engine-regulating device which, at the start of a working cycle, ~~establishes~~ is operable to establish the air/fuel ratio[,] according to recorded engine parameters of a directly preceding working cycle.

38. (Previously Presented) The internal combustion engine according to claim 37, wherein the recorded engine parameters are the cylinder pressures.

39. (Previously Presented) The internal combustion engine according to claim 1, wherein a geometric compression ratio can be varied.

40. (Previously Presented) The internal combustion engine according to claim 39 further comprising an alternating piston, wherein the geometric compression ratio can be varied by the alternating piston.

41. (Previously Presented) The internal combustion engine according to claim 39 further comprising a crankshaft, wherein the geometric compression ratio can be varied by swivelling the crankshaft.

42. (Previously Presented) The internal combustion engine according to claim 39 further comprising a piston pin, wherein the geometric compression ratio can be varied by changing a distance between a middle of the piston pin and an upper edge of the piston.

43. (Previously Presented) The internal combustion engine according to claim 39 further comprising a piston pin, wherein the geometric compression ratio can be varied by a pressure-dependent changing of a distance between a middle of the piston pin and an upper edge of the piston.

44. (Previously Presented) The internal combustion engine according to claim 1, wherein, after a pre-determined number of working cycles, a laser light pulse is emitted into the combustion chamber which is not filled with fuel/air mixture.

45. (Previously Presented) The internal combustion engine according to claim 1, wherein during a starting process of the internal combustion engine, a laser light pulse is emitted into the combustion chamber which is not filled with the fuel/air mixture.